



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: MENARD et al.

Application No. 09/883,963

Group Art Unit: 2635

Filed: June 20, 2001

Examiner: Shimizu, M.

For: SECURE SYSTEM FOR CONTROLLING THE UNLOCKING OF AT LEAST  
ONE MOTOR VEHICLE OPENING PANEL

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**APPEAL BRIEF**

March 13, 2006

Commissioner for  
Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

In follow-up to the Notice of Appeal of October 13, 2005,  
Appellant respectfully requests the Board of Patent Appeals and  
Interferences consider the following arguments and reverse the  
decision of the Examiner in whole.

Applicant has concurrently petitioned for a three month  
extension of time. However, Applicant hereby alternately  
petitions for any necessary relief including extension of time  
and authorizes the Commissioner is hereby authorized to charge  
Applicant's deposit account no. 50-0548 for any necessary fees.

**(i) Real Party in Interest**

The real party in interest is VALEO Electronique.

**(ii) Related Appeals and Interferences**

There are no known related appeals or interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal.

**(iii) STATUS OF CLAIMS**

1. Claims 12-26 are pending, rejected and appealed.

**(iv) STATUS OF AMENDMENTS**

Applicant's amendment filed on April 29, 2005 was entered and considered. There have been no amendments since the Final Action dated July 13, 2005.

**(v) SUMMARY OF CLAIMED SUBJECT MATTER**

INDEPENDENT CLAIM 12

The instant invention, as claimed in independent claim 12, is directed to a system for controlling locking/unlocking mechanism having: vehicle transmission/reception mechanism (3, 4, 5) with vehicle memory (7) including a vehicle circular shift register in which is stored a pseudo-random code. The vehicle transmission mechanism (3, 6, 7) for transmits an interrogation signal which carries the pseudo-random code. A vehicle de-spreading mechanism (6, 7, 8) de-spreads a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory mechanism (7) by a time shift less than required for an intermediate transmission mechanism to intercept and retransmit a response signal, and for verifying whether the received signal carries a signature of a user transmission means. The user transmission/reception mechanism (9, 10, 11) is carried by a user for transmitting the response signal for controlling unlocking actuation of the operable panel. A user memory mechanism includes a user circular shift register (13) in which is stored the pseudo-random code. The user de-spreading mechanism (12, 13, 14) de-spreads the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in

the user memory mechanism (13) by a time shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal. The user transmission mechanism (9, 12, 13, 14) for transmitting the response signal which carries the pseudo-random code and the signature which is specific to the user transmission/reception means.

(See Fig. 1-1, specification pages 3-7).

**(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 12-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lambropoulos (5763935) in view of Bates (6,057,779) in further view of Zeimer (NonPatent Publication).

**(vii) ARGUMENTS**

a) Claims 12-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lambropoulos (5763935) in view of Bates (6,057,779) in further view of Zeimer (NonPatent Publication).

## **CLAIM 1**

The Examiner concedes that Lambropoulos (Primary reference) fails to disclose many of the claimed limitations. Official Action of December 29, 2004, page 3 line 18 through page 4 line 9 and looks to Bates and Zeimer in an attempt to fill in the blanks and reconstruct applicant's invention. However the prior art is simply void of any teaching to require the reception of the response signal with substantial correlation (within a predetermined time shift) before unlocking may be controlled. This claimed scheme is completely void in the art of vehicle panel lock control. While Bates may disclose the use of spread spectrum modulation technology, there is no teaching of a requirement that a signal be received within a time shift as a condition for subsequent control. The Examiner's reference to the disclosure on page 337, or any of the Zeimer disclosure, is not understood. Contrary to the Examiner's assertion Zeimer fails to disclose any type of screening based on time delay. Zeimer discloses nothing more than fundamental Direct-Sequence spread Spectrum and a scheme to spread interference concurrently with the received signal to filter out signals over a different bandwidth. The definition of Bandwidth is well known in the art: "the smallest range of electronic frequencies constituting a band, within which a particularly signal can be transmitted without distortion". Random House Webster's College Dictionary

(Random House, Inc. 1999). The autocorrelation technique disclosed in Zeimer is directed to frequency range and not time shift.

*Interference rejection is accomplished by the receiver despreading mixer, which spreads the spectrum of the interference at the same time that the desired signal is despread. If the interference energy is spread over a bandwidth much larger than the data bandwidth, most of the energy will be rejected by the data filter.*

*Suppose that the BPSK is used for both the data modulation and the spreading modulation and that the interference is a signal tone having power  $J$ . The jammer's best strategy is to place the jamming tone directly in the center of the modem's transmission bandwidth. Zeimer P. 337.*

Zeimer has nothing to do with time shift but rather spread within a bandwidth. Zeimer is completely silent regarding time shift as part of any scheme and in fact assumes the signals are "at the same time". Zeimer is directed to the location/spectrum of signals over a bandwidth and nothing to do with "time shift" for any autocorrelation scheme.

Even if Zeimer were to disclose autocorrelation between two signals, the prior art still lacks both 1) the rejection of such an uncorrelated signal and 2) any requirement of substantial correlation as a requirement to unlock a vehicle panel.

Assuming arguendo, even if the prior art were to suggest a preferred use for correlated signals within the generic teaching of spread spectrum demodulation, the scheme of rejecting uncorrelated signals is absent in the prior art disclosure.

Moreover, there certainly is no disclosure teaching, or even a suggestion to require correlation as a prerequisite to control the unlocking of a vehicle panel.

As previously mentioned, the Examiner concedes that Lambropoulos fails to teach

*"vehicle memory means comprising a vehicle circular shift register in which is stored a pseudo-random code; vehicle transmission means for transmitting an interrogation signal which carries the pseudo-random code; an vehicle disspreading means for disspreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means by a shift less than required*

*for an intermediate transmission means to intercept and retransmit a response signal; and user memory means comprising a user circular shift register in which is stored in the pseudo-random code; use de-spreading means for despreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with the corresponding pseudo-random code stored in the user memory means by a shift less than the required for an intermediate transmission means to intercept and retransmit the interrogation signal; and the user transmission means for transmitting the response signal which carries the pseudo-random code and the signature which is specific to the use transmission/reception means."* (Final Office Action of July 13, 2005 pages 4-5.)

Yet the Examiner looks to two additional references Bates (US 6057799) and Zeimer to reconstruct the claimed invention. Firstly as previously discussed, the Examiner's reliance on Zeimer is misunderstood as contrary to the Examiner's assertion Zeimer fails to disclose the claimed "time shift" and rather is directed to location of a signal within a bandwidth and thus the rejection is unsound on this omission alone. (The prior art must disclose each or suggest all the claimed limitation MPEP



2143.) Zeimer is solely directed to spreading/dispersing technology and fails to disclose or otherwise make any suggestion directed to synchronicity. However, even if Zeimer had some teaching regarding time shift, there is simply no motivation to employ such a technique in the claimed method of unlocking an automotive door. The transmission of electronic signals are employed in vast technologies for vast reasons. In the present invention, signals are sent to unlock a vehicle door. The method of the present invention is directed to timing of a user who interacts with the vehicle door and a specific method of preventing interception and unauthorized access. Even if there is some bad teaching of "time shift" in the vast art of electronic signal transmission and reception, absent applicant's disclosure, there is no motivation to so employ such a technique in the art of vehicle door locks let alone the remaining recitations according to claim 1.

Contrary to the prior art, the present invention is directed to a secure technique where there is substantially synchronization between the pseudo-random code carried by the interrogation signal and the corresponding pseudo-random code stored in the user memory means to permit access. The prior art simply fails to disclose or otherwise teach the required synchronization in substantial correlation within the recited

time shift as a pre-requisite for de-spreading the transmission signal received.

Therefore, because the prior art fails to disclose all the limitations of claim 12, and further fails to contain motivation to even combine the limitations to support the modifications resulting in the Examiner's combination, any rejection of claim 12 and the claims that depend there from is improper.

#### CLAIM 13

While Lambrodopoulos may disclose an interrogation code 14, the Examiner has failed to identify the secret code identified by the user. It is noted that the specification is silent regarding code 50 identified by the Examiner. The prior art also fails to contain the requisite motivation to support the Examiner's further combinations.

#### Claim 14

The prior art is further void of the combination of the limitations of claim 13 and a mixing means for mixing the key code with the pseudo-random code carried by the interrogation signal. The examiner merely points to limitations in the prior art and fails to identify the proper motivation within the prior art.

#### Claim 15

The Examiner looks to yet a fourth reference, Yamamoto 6479442, to reconstruct the claimed invention without any regard to the proper motivation, within the prior art, to support the resultant combination. The omission of the requisite motivation, within the prior art is lacking throughout all the Examiner's rejections and will be tersely referenced regarding claims 16-26 below.

#### Claim 16

Here again, the Examiner has combined four references to support an obviousness rejection with not only all of the claimed limitations, but without the sufficient motivation, within the prior art, to support the resultant combination.

#### Claim 17

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 18

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 19

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 20

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 21

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 22

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 23

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 24

Contrary to the examiner assertion the Prior art is completely void of any teaching of a requirement that a response signal be received within one half bit of user circular shift register. Furthermore, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 25

While Applicant contests the assertion that all the limitations are within the prior art, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant combination. Thus any rejection under 35 U.S.C. 103 is improper.

#### Claim 26

The prior art fails to disclose the response signal is received after a delay exceeding said half bit period, said system prevents unlocking actuation of said operable panel. Furthermore, the Examiner has merely compiled a laundry list of limitations in several references without identifying the proper motivation, within the prior art, to support the resultant

combination. Thus any rejection under 35 U.S.C. 103 is improper.

**viii**

An appendix of the claims is attached hereto.

**ix**

Evidence Appendix. None.

**x**

Related Proceeding Appendix. None.

CONCLUSION

In view of the foregoing, it is respectfully requested the Examiner's rejections be reversed and the application passed to issuance.

Respectfully submitted:

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## **(8) CLAIMS APPENDIX**

12. A system for controlling locking/unlocking means of at least one openable panel of a vehicle, comprising:

vehicle transmission/reception means (3, 4, 5) carried by the vehicle, comprising

vehicle memory means (7) comprising a vehicle circular shift register in which is stored a pseudo-random code;

vehicle transmission means (3, 6, 7) for transmitting an interrogation signal which carries the pseudo-random code; and

vehicle de-spreading means (6, 7, 8) for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means (7) by a time shift less than required for an intermediate transmission means to intercept and retransmit a response signal, and for verifying whether the received signal carries a signature of a user transmission means; and

user transmission/reception means (9, 10, 11) intended to be carried by a user for transmitting the response signal for controlling unlocking actuation of the operable panel, comprising



user memory means comprising a user circular shift register (13) in which is stored the pseudo-random code;

user de-spreading means (12, 13, 14) for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the user memory means (13) by a time shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal; and

the user transmission means (9, 12, 13, 14) for transmitting the response signal which carries the pseudo-random code and the signature which is specific to the user transmission/reception means.

13. A system according to claim 12, wherein:

the interrogation signal transmitted by the vehicle transmission/reception means comprises a key code; and

the response signal transmitted by the user transmission/reception means comprises a secret code determined by the user transmission/reception means as a function of the key code.

14. A system according to claim 13, wherein the vehicle transmission/reception means further comprise a mixing means for mixing the key code with the pseudo-random code carried by the interrogation signal.

15. A system according to claim 13, wherein the user transmission/reception means further comprise mixing means for mixing the secret code with the pseudo-random code carried by the response signal.

16. A system according to claim 13, wherein at least one of the key code and the secret code comprise the pseudo-random code of the interrogation signal or the response signal.

17. A system according to claim 12, wherein the signature consists of the pseudo-random code of the response signal.

18. A system according to claim 12, wherein the system comprises means for synchronizing the vehicle memory means and the user memory means prior to transmission of the interrogation signal.

19. A system according to claim 18, wherein:

the pseudo-random code comprises a post-synchronization pseudo-random code;

the user transmission/reception means transmits a pre-synchronization pseudo-random code upon activation of the user transmission/reception means; and

the vehicle transmission/reception means comprise means for self-synchronizing with the pre-synchronization pseudo-random code transmitted by the user transmission/reception means.

20. A system according to claim 19, wherein the pre-synchronization pseudo-random code is shorter than the post-synchronization pseudo-random code.

21. A system according to claim 20, wherein the post-synchronization pseudo-random code comprises 127-bit codes.

22. A system according to claim 12, wherein the interrogation signals and response signals comprise RF signals modulated by a two-phase NRZ modulation.

23. A system according to claim 12, wherein the vehicle is an automobile.

24. A system according to claim 12, wherein the time shift comprises less than one half of a bit period with respect to the code of the user circular shift register.

25. The system according to claim 12, wherein when said response signal is received after a delay exceeding said time shift, said system prevents unlocking actuation of said operable panel.

26. The system according to claim 24, wherein when said response signal is received after a delay exceeding said half bit period, said system prevents unlocking actuation of said operable panel.